

## **REMARKS**

In response to the above-identified Final Office Action, no claims are amended, no claims are cancelled and no claims are added. Claims 1-7, 14-19, 29, 31-33, 35-37, 39-41 and 43-48 were examined. Claims 1-7, 14-19, 29, 31-33, 35-37, 39-41 and 43-48 are rejected. Claims 29, 31-33, 35-37, 39-41, 43 and 44 are allowed. Applicants respectfully request reconsideration of pending Claims 1-7, 14-19, 29, 31-33, 35-37, 39-41 and 43-48 in view of at least the following remarks.

### **I. Claims Rejected Under 35 U.S.C. §103**

The Patent Office rejects Claims 1, 2, 5, 6, 14, 15 and 17 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,907,500 issued to Nadehara ("Nadehara") in view of U.S. Patent No. 6,326,984 B1 issued to Chow, et al. ("Chow"). Applicants respectfully traverse this rejection.

Regarding Claims 1 and 17, Claims 1 and 17 include the following claim features, which are neither taught nor suggested by either Nadehara, Chow or the references of record:

storing color components of an image of a first color component type in a planar format;

storing color components of the image of a second color component type and a third color component type in a packed format. (Emphasis added.)

Conversely, Nadehara discloses:

a data storage format in which four 8-bit pixel values are packed into one word (32-bit) length register without any gap (hereinafter referred to as "packed format"), thereby reducing the operation amount per pixel and increasing the speed of the compensation processing. (col. 9, lines 15-19.)

Conventionally, the number of bits used to represent each pixel determines how many colors or shades of gray can be displayed. Nadehara describes an 8-bit color mode in which 8-bits are used for each pixel, making it possible to display 256 ( $2^8$ ) different colors or shades of gray. Hence, a pixel value simply represents a final color value assigned to the pixel; namely, one of the 256 different colors or shades of gray represented by the 8-bits of the pixel.

In contrast to pixel values, which represent a final color value, color components of an image of first, second and third types, as recited by Claims 1 and 17 above, refer to components of a color model. A color model generally an abstract mathematical model describing the way colors can be represented as tuples of numbers, typically as three values or color components, the color components are blended to generate a final color value. Yet according to the Examiner:

A pixel value in itself is a color component type and it is not disclosed in an isolated or abstract form. Therefore, the storage of pixel values is not different or distinct from color components. (See, p. 2 of Final Office Action mailed June 30, 2004.)

Applicants respectfully disagree with the Examiner's contention. In fact, Applicants submit that the final color value provided by the 8-bit pixels, as described within Nadehara, does not represent color a component, such as, for example, the R, G and B components of the RGB color space. Applicants respectfully submit that the specific color that a pixel describes is some blend of the three components of the color space or spectrum.

In a true color, or 24-bit color system up to three bytes of data may be allocated for specifying a pixel's color; one byte for each major color component. Conversely, the 8-bit pixel values as used by Nadehara use only one byte to specify the specific color described by the pixel. Accordingly, Applicants respectfully submit that a pixel value is a blend of the various color components of the color space, and as a result, does not represent a color component type, such as, for example, the R color component, B color component or G color component of the RGB color space.

Therefore, Applicants respectfully submit that the storage of pixel values is, in fact, distinct and different from the storage of color components according to first, second and third color component types, as recited by Claims 1 and 17.

Furthermore, Applicants respectfully submit that the packed format, as taught by Nadehara, is generally utilized to enable parallel execution of data using, for example, single instruction, multiple data (SIMD) type instructions. (See, col. 11, lines 25-31.) Hence, Applicants respectfully submit that the packed format of 8 bit pixel values, as taught by Nadehara, is distinct from the storage of color components of a second color component type and a third color component type in a packed format, as required by Claim 1.

Accordingly, Applicants respectfully submit that Nadehara is devoid of any teachings or suggestions regarding color component types and is simply directed to a motion compensation adder for increasing motion compensating processing speed by providing an SIMD multiply accumulate instruction for reducing the number of operations per pixel required to achieve motion compensation. (See col. 8, lines 60-67 and col. 10, lines 47-65.) Furthermore, as correctly pointed out by the Examiner, Nadehara fails to disclose storing the plurality of color components in the mixed format of planar format and packed format.

Accordingly, the Examiner cites Chow, which according to the Examiner discloses storing plurality of color components in both planar and packed format. According to the Examiner, it would have been obvious to one of ordinary skill in the art to modify the device taught by Nadehara to store plurality of color components in mixed format to improve the efficiency of fetches from memory. Applicants respectfully disagree with the Examiner's contention.

As indicated above, Nadehara provides no teachings or suggestions with regards to color component types, since the teachings of Nadehara are specifically limited to a packed register storage format for 8-bit pixel values. Conversely, the teachings in Chow are directed to a memory

storage technique for storing color components in both planar and packed format. Furthermore, as indicated above, pixels are not categorized according to color component types, but simply represent a blend of color components to provide a final color of the respective pixel. Hence, Applicants submit that one skilled in the art would not modify Nadehara, as proposed by the Examiner, since the skill in the art would provide no such teaching or suggestion for the proposed combination.

Moreover, even assuming, *arguendo*, that Nadehara could be modified in view of Chow, the teachings in Nadehara are strictly limited to performing motion compensation of pixel values stored within registers according to the packed format. Accordingly, Applicants submit that modification of Nadehara in view of Chow to perform motion compensation of color components of an image in a mixed format of planar format and packed format, would render Nadehara unsatisfactory for its intended purpose of improving motion compensation processing speed of pixel values. In fact, the Examiner's proposed modification of Nadehara would once again limit Nadehara to the storage of pixel values into main memory on a one pixel basis, rather than on the four-pixel basis as provided by the packed format. (*See*, col. 9, lines 8-19.)

Accordingly, Applicants respectfully submit that the features of Claims 1 and 17 could only be arrived at through inappropriate hindsight. However, it is well established that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent the teaching or suggestion supporting such combination. ACS Hospital Sys., Inc. v. Montefiore Hospital, 732 F.2d. 1572, 1577, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984). Also, one cannot find obviousness through hindsight to construct a claimed invention from elements of the prior art. In re Warner, 379 F.2d 1011, 1016, 154 U.S.P.Q. 173, 177 (C.C.P.A. 1967).

Therefore, Applicants respectfully submit that a *prima facie* case of obviousness of Claims 1 and 17 over Nadehara in view of Chow is not established, since the Examiner fails to illustrate a teaching or suggestion to modify the reference teachings. Furthermore, the combination of the reference teachings fails to teach or suggest each of the claim features of Claims 1 and 17. Accordingly, Claims 1 and 17 are patentable over Nadehara, Chow and the references of record. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §103(a) rejection of Claims 1 and 17.

Regarding Claim 2, Claim 2 depends from Claim 1 and therefore includes the patentable claim features of Claim 1. Accordingly, Claim 2, based on its dependency from Claim 1 is also patentable over Nadehara, Chow and the references of record. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §103(a) rejection of Claim 2.

Regarding Claims 5 and 14, Claims 5 and 14 include the following claim features, which are neither taught nor suggested by either Nadehara, Chow or the references of record:

converting the plurality of color components into a mixed format of planar format and packed format, such that color components of a first color component

type are stored in a planar format and color components of a second color component type and a third color component type are stored in a packed format; and motion compensating the plurality of color components of the image in the mixed format of planar format and packed format. (Emphasis added.)

As indicated above, Nadehara provides no teachings or suggestions with regards to first, second and third color component types. Specifically, the teachings of Nadehara are limited to motion compensating of 8-bit pixel values stored within a register according to the packed format. Applicants respectfully submit that the teachings of Nadehara are strictly limited to motion compensating of pixels according to the packed format using an SIMD multiply accumulate instruction.

Hence, Applicants respectfully submit that one skilled in the art would not modify Nadehara in view of Chow in order to perform motion compensating according to the mixed format of planar format and packed format, as required by Claims 5 and 14, since neither the references nor the skill in the art would provide any suggestions for the proposed modification.

Furthermore, Applicants respectfully submit that modification of Nadehara to perform motion compensation in a format other than the packed format, as taught by Nadehara, would render Nadehara unsatisfactory for its intended purpose of improving the processing speed of motion compensation. Accordingly, Applicants respectfully submit that the features of Claims 5 and 14 could only be arrived at through inappropriate hindsight.

Therefore, Applicants respectfully submit that a *prima facie* case of Claims 5 and 14 over Nadehara in view of Chow is not established, since the Examiner fails to illustrate a teaching or suggestion to modify the reference teachings. Furthermore, the combination of reference teachings fail to teach or suggest each of the claim features of Claims 5 and 14. Accordingly, Claims 5 and 14 are patentable over Nadehara, Chow and the references of record. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §103(a) rejection of Claims 5 and 14.

Regarding Claim 6, Claim 6 depends from Claim 5 and therefore includes the patentable claim features of Claim 5, as described above. Accordingly, Claim 6, based on its dependency from Claim 5, is also patentable over patentable over Nadehara, Chow and the references of record. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §103(a) rejection of Claim 6.

The Patent Office rejects Claims 4 and 19 under 35 U.S.C. §103(a) as being unpatentable over Nadehara in view of Chow as applied to Claim 1 and further in view of U.S. Patent No. 6,07,690 issued to Yamada et al. ("Yamada"). Applicants respectfully traverse this rejection.

Regarding Claim 4, Claim 4 depends from Claim 1 and therefore includes the patentable claim features of Claim 1. In regards to the Examiner's citing of Yamada, Yamada fails to rectify

the deficiencies of Nadehara in failing to teach the storage of color components. In addition, the Examiner fails to illustrate a teaching or suggestion for modifying Nadehara in view of Chow. In fact, Applicants submit that the modification of Nadehara in view of Chow would run contrary to the explicit teachings of Nadehara.

One of ordinary skill in the art would not be motivated to modify Nadehara in a manner explicitly contrary to Nadehara's own teachings. Accordingly, Applicants respectfully submit that the features of Claims 1 and 17 could only be arrived at through inappropriate hindsight.

Accordingly, Claims 1 and 17 are patentable over Nadehara, Chow and Yamada, whether viewed independently or in combination. Consequently, Claim 4, based on its dependency from Claim 1, is also patentable over Nadehara, Chow, Yamada and the references of record. Therefore, Applicants respectfully request that the Examiner reconsider and withdraw the §103(a) rejection of Claim 4.

Regarding Claim 19, Claim 19 depends from Claim 17. Accordingly, Claim 19, based on its dependency from Claim 17, is also patentable over Nadehara, Chow, Yamada and the references of record. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §103(a) rejection of Claim 19.

Regarding Claims 45-48, Claims 45-48 depend from one of independent Claims 1, 5, 14 or 17. Therefore Claims 45-48 are patentable based on the dependency from Claims 1, 5, 14 or 17, respectively.

## **II. Allowable Subject Matter**

The Examiner has allowed Claims 29, 31-33, 35-37, 39-41, 43 and 44 over the prior art. Regarding Claims 29, 31-33, 35-37, 39-41, 43 and 44, Applicant would respectfully like to thank the Examiner for recognizing the allowability of Claims 29, 31-33, 35-37, 39-41, 43 and 44.

### CONCLUSION

In view of the foregoing, it is submitted that Claims 1-7, 14-19, 29, 31-33, 35-37, 39-41, 43 and 44-48 patentably define the subject invention over the cited references of record, and are in condition for allowance and such action is earnestly solicited at the earliest possible date. If the Examiner believes a telephone conference would be useful in moving the case forward, he is encouraged to contact the undersigned at (310) 207-3800.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly, extension of time fees.

Respectfully submitted,

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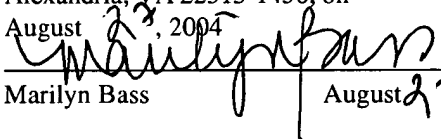
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